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(71) Applicant(s)

Christopher George Fuller  
10 Brayfield Road, LITTLEOVER, Derby,  
DE23 6LD, United Kingdom

(72) Inventor(s)

Christopher George Fuller

(74) Agent and/or Address for Service

Christopher George Fuller  
10 Brayfield Road, LITTLEOVER, Derby,  
DE23 6LD, United Kingdom

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(56) Documents Cited

GB 0481919 A

US 5004383 A

US 4997320 A

US 4175895 A

US 3976388 A

(58) Field of Search

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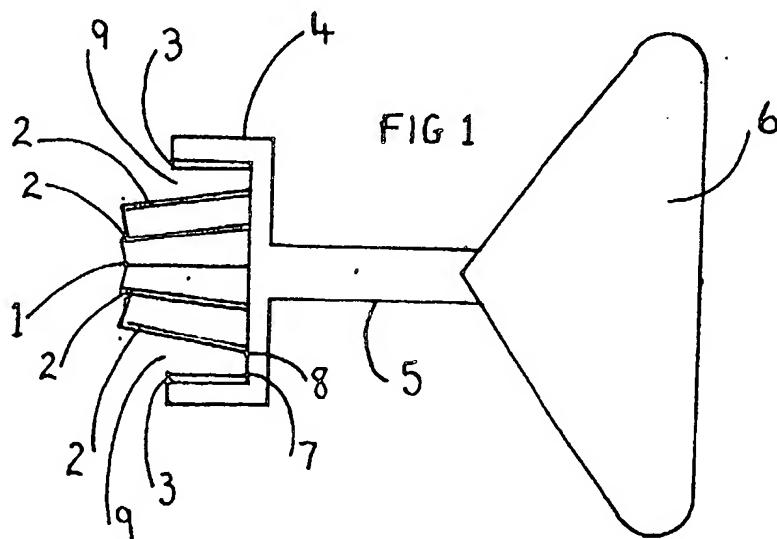
INT CL<sup>7</sup> B23B 5/16

Other: On line: EPODOC; WPI; JAPIO

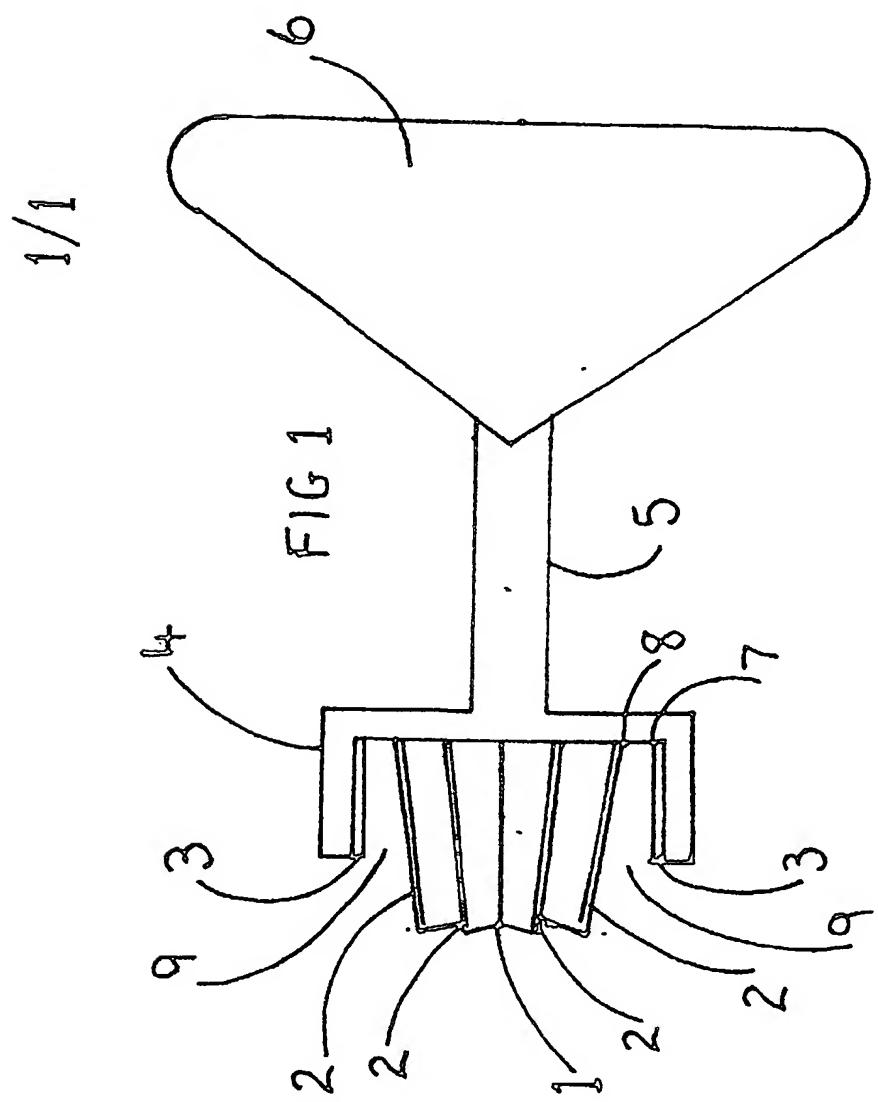
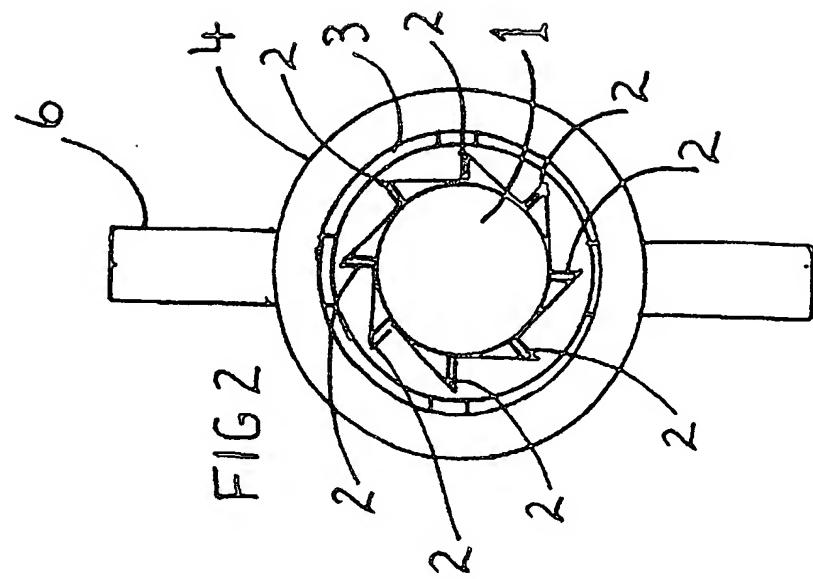
(54) Abstract Title

A tube deburring tool

(57) A hand tool for simultaneously removing burrs from the inner edge and outer edge of the cut end of copper tube. The preferred embodiment of the tool consists of a shaft 5 having a deburring element disposed at one end, and a handle 6 at the other. The deburring element consists of a generally conical element 1 and a circular rim 4 projecting from the shaft 5. The exterior and interior surfaces are serrated, forming cutting surfaces 2, 3. In use, a cut tube end is placed over the conical element which serves to guide the end into contact with the serrated exterior and interior surfaces, and the tool is rotated with respect to the tube, wherein deburring is quickly and easily accomplished.



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## CUTTING TOOL

The invention relates to a tool used in plumbing during the bending and cutting of copper tube.

Such tools are used to help with the insertion of a bending spring but are known to suffer from the disadvantage of distorting the end of the pipe, and not being able to attach the pipe fittings ready for soldering.

The object of this invention is to eliminate this distortion so as not only being able to fit the bending spring but also being able to fit the pipe fittings ready for soldering.

Accordingly, this invention a tool to remove any burrs from the inside and outside of the copper tube causing no distortion and allow the bending spring to be easily fitted inside the pipe, then when the process of bending is completed and the spring removed the pipe fittings will easily fit on the end of the tube.

The cutters would preferably be made of steel, but the handle could be made of plastic, fixed or removable on the same lines as a socket using different size tools for different size tube but retaining the same handle.

An example of the invention will now be described with reference to the accompanying drawing.

Figure 1 shows an end view of whole tool

Figure 2 shows an end view from the cutting end.

As shown in figure 1 the tool has a handle 6 a centre shaft 5 which is attached to the cutter 4 & 1

A piece of copper tube is offered to the space 9 inside the cutter 4 & 1

Whilst holding the copper tube the cutter 4&1 is rotated in a clockwise direction.

When the burred copper tube comes into contact with the cutters 2 & 3 the copper tube is trimmed internally and externally until it reaches the end of the cutters 7 & 8 which are the exact size of the internal and external diameters of the copper tube.

Where upon the copper tube is removed from the cutting tool 4 & 1 and is ready for use with spring and fittings.

**CLAIMS**

1. A tool including a handle and shaft with a means of trimming dressing or cutting the internal and external diameters simultaneously of tubing and aims to remove the risk of distortion.
  
2. A tool as claimed in claim 1 where the internal trimming device is tapered to allow easy access of the tube.
  
3. A tool claimed in claim 1 or claim 2 where the external diameter trimming device is tapered to give easy access of the tube.
  
4. A tool claimed in claim 2 or claim 3 where the trimmed tubing is finished at the correct internal and external diameters.



INVESTOR IN PEOPLE

Application No: GB 0201442.1  
Claims searched: 1-4

Examiner: John Bray  
Date of search: 30 May 2002

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): B3C

Int Cl (Ed.7): B23B 5/16

Other: On line: EPODOC; WPI; JAPIO

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
Y	GB 481919 (BURROUGH) see whole document	1-4
Y	US 5004383 (HUFF; HUUF) see esp col 2 ln35-ln58, col 3 ln28-ln38 & figs	1-4
Y	US 4997320 (HWANG) see esp col 2 ln48-ln50 & fig 9	1-4
Y	US 4175895 (BURROUGHS) see esp col 5 ln34-ln44 & figs 7 & 8	1-4
X	US 3976388 (WEBB) see esp col 3 ln48-col 5 ln14 & figs	1-4

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family		E	Patent document published on or after, but with priority date earlier than, the filing date of this application.